# 1992 IMPLICATIONS of a SINGLE EUROPEAN MARKET

An Initiative

1992

CANADA
EUROPE

External Affairs and

# 1992

# IMPLICATIONS

# OF A SINGLE EUROPEAN MARKET

---

## AUTOMOTIVE INDUSTRY

February 1990

91-01390/

## ACKNOWLEDGEMENTS

This report was prepared by DesRosiers Automotive Research Inc. under the direction of Raymond Chabot International Inc. (RCI), Bureau d'Informations et de Prévisions Économiques (BIPE) and Informetrica Ltd. for External Affairs and International Trade Canada.

We wish to acknowledge the co-operation of those companies and industry associations that were approached in the course of conducting background research for this report. Mr. Roger Hill of Hill Sloan Associates Inc. played a major role in shaping the final report. Valuable assistance was provided throughout by Mr. Chris Curtis and Ms. Maureen Beard-Freedman of Industry, Science and Technology Canada, and by Mr. M.R. (Mitch) Vlad, Mr. John Dierckx and Mr. Don Partridge of External Affairs and International Trade Canada.

The opinions expressed in this report are those of the authors and do not necessarily represent the past or current policy of the Government of Canada.

© Her Majesty the Queen in Right of Canada, as represented by the Secretary of State for External Affairs, 1990. All rights reserved.

## FOREWORD

The European Community (EC), with a GDP similar to that of the United States, is Canada's second-largest trading partner and source of investment and technology. Canadian companies therefore have a particular interest in the completion of the European Community's internal market. The goal of the Single Market program, or Europe 1992 as it is often called, is the complete removal of barriers to the movement of goods, services, labour and capital within the 12 states of the Community to create a dynamic and rapidly growing market.

External Affairs and International Trade Canada (EAITC) is pleased to present this study as part of a series of reports on the implications of a Single European Market on Canada's trading, investment and technology interests. The areas to be covered by these reports include (in publication order):

Agriculture and Food Products
Consumer Goods and Cultural Industries
Telecommunications and Computers
Automotive Industry
Minerals and Metals
Forest Products
Defence, Aerospace and Transportation
Specialty Chemical Products, New Materials, Pharmaceuticals and Biotechnology
Industrial Products and Services
Financial Services
Fisheries Products
Professional and Consulting Services

These reports, prepared by Raymond Chabot International Inc., BIPE (Bureau d'Informations et de Prévisions Économiques) and Informetrica Ltd. analyse the trends, export impact, competition, investment implications and technological acquisitions arising from the EC Single Market of 1992.

This series of reports complements an earlier study published by EAITC, *1992: Effects on Europe*, which details the major economic and trade effects of the integration. Now in its third printing due to popular demand, the report provides a clear picture of the unification legislation and implementation measures and the general expectations and response of European industry.

Following the publication of these sectoral reports, EAITC will focus on subsectors of Canadian industry in which particular opportunities arise from the Single Market. These studies will go into much more detail on the trade ramifications specific to each subsector.

Together these reports, the overview presented in *Effects on Europe*, the sectoral analyses of this series of studies, and the subsector details of the next phase of Europe 1992 reporting, are not simply an information base for Canadian business people, but can be seen as a call to action. Europe 1992 is happening now. It will affect the way we do business. We have to know about it. And we have to plan to profit from it.

CONTENTS


LIST OF ACRONYMS AND ABBREVIATIONS 7

EXECUTIVE SUMMARY 8

1. BACKGROUND AND TRENDS 12

1.1 The Canadian Automotive Sector 12

1.2 Canadian Trade, Technology and Investment Flows with the EC 15

1.3 The EC Automotive Sector 18

2. EUROPE 1992: AUTOMOTIVE SECTOR DEVELOPMENTS 25

2.1 Existing Barriers to Automotive Trade within the EC 25

2.2 The EC's 1992 Strategy for the Automotive Sector 25

2.3 Structural Changes in the EC Automotive Sector 28

3. EUROPE 1992: IMPACT ON THE CANADIAN AUTOMOTIVE SECTOR 30

3.1 Overview 30

3.2 Export Opportunities -- Vehicles 30

3.3 Export Opportunities -- Original Equipment Parts 31

3.4 Export Opportunities -- Aftermarket Parts 31

3.5 Joint Ventures 32

3.6 Technology Sharing 33

4. STRATEGIES AND ACTIONS FOR CANADIAN FIRMS 34

4.1 Actively Seek Opportunities in the EC 34

4.2 Build on Strengths 34

4.3 Develop Effective Promotional Material 34

4.4 Take a Long-term Perspective 34

4.5 Take a Strategic Approach to Market Entry 35

4.6 Anticipate Increased Competition from EC Firms 36

**CONCLUSION** 37

**APPENDICES** 39

**A: Supplementary Tables** 40

Table A.1 North American Production of Motor Vehicles, 1965-88 40
Table A.2 North American Transplant Capacity (Passenger Cars) 41
Table A.3 EC Motor Vehicle Sales by Country, 1987-88 42
Table A.4 EC Motor Vehicle Production by Country, 1987-88 43
Table A.5 Component Markets in Europe -- 1985 Summary 44
Table A.6 Leading European Automotive Parts Suppliers 45
Table A.7 Worldwide Sales of European, U.S. and Japanese Automotive Parts Suppliers, 1988 46

**B: Charts** 47

Figure 1: Canadian Exports to EC, 1978-87 47
Figure 2: Canadian Imports from EC, 1978-87 47
Figure 3: Canadian Exports to EC by Country 48
Figure 4: Canadian Imports from EC by Country 48

**BIBLIOGRAPHY** 49

**List of Tables**

1. Canada-EC Automotive Trade, 1988 15

2. Major European Community Auto-Related Investment in Canada 17

3. World Production of Motor Vehicles 19

4. Western European Market Share, 1989 20

5. Development of Japanese Market Share in the EC, 1978-88 20

6. Sales of Six European Parts Suppliers, 1986 21

## LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| AIC | Automobile Importers of Canada |
| A/V | Audio-visual |
| B-L | Belgium and Luxembourg |
| CKD | Completely knocked down |
| Comecon | Council for Mutual Economic Co-operation -- a 10-country trade alliance including the U.S.S.R. and Eastern Europe |
| DRI | U.K.-based consulting firm |
| EC | European Community |
| ECU | European Currency Unit |
| EFTA | European Free Trade Association -- includes Austria, Finland, Iceland, Norway, Sweden and Switzerland |
| GATT | General Agreement on Tariffs and Trade |
| JAMA | Japan Automobile Manufacturers Association |
| JV | Joint venture |
| MVMA | Motor Vehicle Manufacturers Association |
| NIC | Newly industrialized country |
| OE | Original equipment |
| PSA | Peugeot Group |
| R&D | Research and development |
| RPM | Revolutions per minute |
| U.K. | United Kingdom |
| U.S. | United States |
| VAT | Value-added tax |

## EXECUTIVE SUMMARY

A number of the regulatory changes that will be made under the European Community's Single Market program will reinforce major structural changes already under way as a result of the global transformation of the auto industry.

These developments will result in some significant new opportunities for Canadian-based firms, especially in the original equipment and aftermarket parts sectors, provided that Canadian firms take appropriate action to capitalize on these opportunities.

### 1992 Regulatory Changes

The major regulatory changes under Europe 1992 that will affect the EC's auto industry are:

*Reduction of technical obstacles to trade within the Community*. The effect of the reduction of technical barriers to trade will be to increase the competitiveness of European automobile producers. European firms will be able to devote more of their R&D efforts to new product development as opposed to adaptive engineering. The reduced complexity of model development and production will also lead to cost savings in the final product.

Non-EC firms exporting to the EC should also benefit from the fact that once testing and certification requirements have been met in one Member State the product should be free to move freely throughout the Community.

*Tax harmonization*. Tax harmonization, when it is finally achieved, will have a significant impact on the automobile market in the EC. Automobile demand is likely to increase in those Member States where taxation levels have been relatively high, such as France and Italy. However, it is becoming increasingly evident that this harmonization will not be realized by the end of 1992.

Ultimately, vehicle companies will be able to more readily pursue Community-wide marketing strategies, when tax levels are harmonized.

Value-added tax (VAT) changes and user tax changes will also affect the consumer's choice of car size and thereby affect production and marketing decisions by automobile producers.

*Controls on government subsidies/interventions*. Governments in the Member States will be much more constrained in their ability to intervene on behalf of "national champions." As a result new investments, restructuring, mergers and acquisitions should take place more readily and more freely throughout the Community.

*EC-wide road-worthiness tests*. The Commission proposed to introduce legislation that would require mandatory testing of passenger and goods vehicles below 3.5 t.

The tests would cover a specified list of items including braking, steering, seat belts, wheels, suspensions, chassis frame, noise, suppression of radio interference and exhaust emissions.

Clearly this legislation could lead to a significant increase in the demand for replacement parts in a number of Member States.

*Stricter pollution standards*. A group of new Directives have been adopted for private car emissions. The Directive on small car emissions provides for mandatory norms from 1992 onwards. Voluntary EC standards for medium and large cars are expected to be tightened by 1993.

Although the Commission hopes that by 1992 advances in lean burn technology will be sufficient to meet the new standards, at present, the new norms (which are comparable to U.S. standards) can only be met by three-way catalylic converters.

*Competition policy measures*. Although the Commission allows selective or exclusive distribution arrangements in the auto sector, a number of conditions are attached to this exemption to safeguard effective competition. Two of the most important conditions for aftermarket suppliers are:

- Consumers can have servicing or repairs done under the manufacturer's warranty anywhere in the Common Market.

- Spare parts supplied by third parties that match the quality of those supplied by the automotive manufacturer can be sold and used in the official distribution network.

*EC-wide import restraints*. With regard to imports from Asian transplant facilities in North America, the Community appears to have reached the conclusion that these would not be included in any restraint agreement. It is expected that any vehicle considered by Canada and the U.S. as being "North American" under the Canada-U.S. Free Trade Agreement would be considered North American for purposes of import to the Community.

*Local content*. The local content issue revolves around whether a certain minimum mandatory percentage should be fixed for European content in foreign cars manufactured or assembled in the Community. Local content appears no longer to be an issue. The European Community apparently has no intention of introducing local content provisions for the auto industry.

*Abolition of border barriers within the Community*. Border controls between Member States result in significant costs for automotive producers in the EC. Direct costs arise from meeting existing border formalities; indirect costs occur because of delays, which influence inventory, buffer stocks, etc.

The abolition of frontier controls and formalities that slow the physical movement of goods will, therefore, result in important cost and efficiency improvements. These improvements should accrue to European firms and importing firms alike.

## 1992 Opportunities for Canadian Firms

*Vehicle Assembly*

New opportunities for Canadian vehicle assemblers should result from an expanded overall European market and reduced administrative expenses involved in exporting. Demand could thus increase in European markets for Canadian-assembled niche vehicles such as minivans and jeeps as well as some "transplant" passenger cars.

*Original Equipment Parts*

There is the possibility of some expansion of exports to EC countries of high-value-added parts, particularly those in which Canadian producers have proprietary technologies. Globalization pressures and rationalization of the parts industry within Europe will encourage technology-sharing agreements and joint ventures between European and Canadian firms. Some European parts producers may actively seek North American partners or investors with needed capital and technological expertise. Those in turn may facilitate avenues of access for Canadian producers to the EC market. The European subsidiaries of Ford and General Motors may provide an important point of access for Canadian suppliers, due to their North American ties and existing experience with cross-border parts sourcing in the EC.

*Aftermarket Parts*

Opportunities for Canadian aftermarket exporters centre on reduced administrative expenses resulting from regulatory harmonization and removal of remaining border controls. As well, there may be a "coattails" effect from increased sales of Canadian-assembled vehicles in the EC. Accessories present a significant possible opportunity for Canadian producers, as these fall outside the scope of the Eurowarranty. A number of small Canadian accessories manufacturers have already successfully exploited market niches in the EC with such items as floor mats and daytime running light systems.

Stress could be placed on areas of comparative advantage created by Canadian conditions and regulations -- winter accessories, rear brake lights, etc.

## Strategies and Actions by Canadian Firms

To take maximum advantage of the opportunities of the creation of the Single Market in the EC by 1992, Canadian firms, especially OE parts suppliers, should give consideration to the following success factors:

*Entrepreneurial drive*. The key success factor for those Canadian firms that, to date, have been successful in the EC automotive market has been the entrepreneurial drive to seek out opportunities and make them happen.

*Proprietary technology*. In a period of severe supplier rationalization in Europe, technological proprietorship and innovation will be one of the few paths of entry for a new supplier; high quality and low price will not be sufficient.

*Effective promotional material*. Since Canadian firms continue to have a low profile in the EC market they will have to take specific steps to make EC

assemblers aware of their capabilities. This will involve developing comprehensive targeted documentation and A/V material on the firm, its products, its technologies and its capabilities.

*Long-term commitment*. In all cases a long-term perspective will be vital. The firm may have to start with very small contracts in order to gradually build a profile and reputation with vehicle assemblers.

*Export options*. A good relationship with Ford and General Motors in North America may facilitate access to these companies' subsidiaries in the European Community, particularly as sharing of components and technologies across continents increases.

The Canadian government's duty remissions programs to encourage Canadian exporters of automotive products will continue to be available until the end of 1998.

It will often be very useful to use the Canadian or North American representatives of the EC vehicle producers as an initial point or entry.

*Joint ventures*. Consideration should be given to establishing a physical presence in Europe and pursuing the joint venture (JV) option. This addresses the need to be geographically close to the assembler and overcomes barriers raised by the rationalization of the EC's parts subsector.

*Anticipate increased EC competition*. Many existing European parts firms will be forced to merge to remain competitive. Surviving European players may emerge in a strengthened position to compete in world markets, including North American markets.

# 1. BACKGROUND AND TRENDS

## 1.1 The Canadian Automotive Sector

### a) Overview

The Canadian automotive sector is characterized by a high degree of integration of its original equipment (OE) producers (both vehicle assemblers and parts producers) with that of the United States. Assembly has traditionally been dominated by U.S.-based vehicle manufacturers.

This integration was solidified by the signing of the Canada-United States Automotive Products Trade Agreement, commonly known as the Auto Pact, in 1965. The Auto Pact provided for duty-free trade in assembled vehicles and original equipment parts subject to certain conditions guaranteeing a minimum level of Canadian vehicle production and value-added.

Tariffs on aftermarket parts and accessories, however, were not affected by the Auto Pact. While production of original equipment has become largely rationalized on a continental basis, aftermarket production in Canada has remained to a considerable extent of a "branch-plant" nature (i.e., producing a broad range of product lines for the Canadian market only). This situation will likely change over the next several years as the Canada-U.S. Free Trade Agreement removes tariffs on aftermarket parts and accessories in five annual steps ending January 1, 1993.

### b) Vehicle Assembly Subsector

The development of the Canadian motor vehicle manufacturing industry over the past two and one-half decades has been shaped by three principal developments:

*The signing of the Auto Pact in 1965.* The Auto Pact created an integrated North American market for assembled vehicles and original equipment parts.

The Auto Pact paved the way for unprecedented prosperity in the Canadian motor vehicle industry. Total Canadian vehicle output, which stood at 846 000 in 1965, more than doubled to over 1.8 million by 1978 and reached a record of almost 2 million units in 1988. Employment in assembly plants grew from 34 000 in 1964 to over 50 000 by the late 1970s. Assembly employment has ranged between 42 000 and 50 000 jobs during the 1980s.

The Canadian share of North American vehicle production soared from 7 per cent in 1965 to 14 per cent in 1975, and reached 15 per cent in 1988. The Canadian share could reach 20 per cent by the mid-1990s, as a result of heavy investments by both the Big Three and Asian-based vehicle companies. Within the Auto Pact framework, Canada's favourable exchange rates, lower fringe benefit costs (due to its national health insurance system) and skilled and quality-conscious work force have helped attract a disproportionately high share of new automotive investment.

*The growing market share of offshore imports.* In both Canada and the U.S., the initial wave of imports was made up almost entirely of cars from Europe and the United Kingdom.

The 1970s saw the relative importance of the foreign nameplates decline until, in 1979, import penetration stood at 14 per cent, in Canada.

The most recent surge in import penetration began in 1980, triggered by rising fuel prices. By 1987, overseas-built cars accounted for 34.2 per cent of Canadian sales. This figure

declined somewhat to 31.0 per cent in 1988.

Japanese nameplates, which seized import market leadership from the Europeans in the early 1970s, have been the principal motive force behind the latest import boom in Canada as in the U.S. Fuel economy and low price were the main initial selling points of the Japanese players, but their position in the marketplace has been reinforced in recent years by generally superior quality and reliability records and by technological innovation. This has allowed the Japanese manufacturers to shift their product portfolios upscale, with greater emphasis on the middle, and most recently, upper price ranges. Such "upscaling" has in turn enabled the Japanese to absorb the impact of the dramatic rise in the value of the Yen between 1985 and 1988.

*Restructuring of the vehicle assembly industry across North America.* This issue has become more critical with the presence of Asian-based vehicle manufacturers -- the so-called "transplants" -- in North America. These manufacturers are aggressively expanding their production capabilities, raising fears of a serious overcapacity problem in the North American motor vehicle industry in the 1990s. Output of the North American transplant facilities is expected to grow from 845 000 passenger cars in 1988 to near 2.2 million units by 1994.

**c) Original Equipment Parts Subsector**

Production of original equipment automotive parts (i.e., all components installed in the vehicle at the point of assembly) accounts for over 80 000 jobs in Canada with a 1988 value of shipments of $13.6 billion. It has, like that of motor vehicles, become continental in focus since the implementation of the Auto Pact. Thus, Canadian assembly plants import substantial percentages of their components from the United States, while the Canadian automotive parts industry exports a large percentage of its output to U.S. assembly facilities. Canadian OE parts production has also grown substantially under the Auto Pact, but the rapid growth in vehicle production has left Canada in a chronic trade deficit position vis-à-vis the United States in automotive components. In 1988 Canada enjoyed an $8.2 billion surplus in trade of assembled vehicles with the United States, but this was to a considerable extent offset by a $5.8 billion deficit in motor vehicle parts.

Nonetheless, the Canadian share of North American parts production has been growing throughout the 1980s. Between 1982 and 1987, Canadian parts output grew at an average annual rate of 15 per cent, versus 9.5 per cent in the United States. Favourable exchange rates, low benefit costs and a strong quality record have attracted parts investment to Canada and investment in assembly capacity. In fact, Canadian parts facilities have, throughout the 1980s, accounted for a disproportionately high percentage of the Big Three manufacturers' top quality awards -- General Motors' Spear 1, Ford's QI and Chrysler's Pentastar. Canada's share of North American parts production has traditionally been strongest in stampings and plastics.

Four principal factors may be highlighted as forces shaping the Canadian OE parts industry over the past two decades:

*Emerging tier structure.* The North American (including Canadian) automotive parts industry is witnessing the development of a tier structure, under which those parts makers dealing directly with the assemblers (Tier One Suppliers) are expected to take on responsibilities for research and development and the design, testing and sub-assembly of components previously

undertaken by the vehicle manufacturers. Parts facilities without design/testing capabilities may thus be relegated to sub-contractor status, i.e., Tier 2 or Tier 3 suppliers.

*Growing role of Canadian-owned firms.* Another significant development of the 1970s and 1980s has been the growing Canadian ownership share of Canada's parts manufacturing capacity. This share is currently estimated at 20 per cent, versus 4 per cent early in the last decade.

A number of Canadian firms have emerged as significant North American players. Examples include Magna International (a widely diversified supplier with many small production facilities), the Woodbridge Group (insulation, plastic trim, seating) and A.G. Simpson (metal stampings).

*New foreign investment.* The traditionally dominant U.S.-owned branch plants are also being joined by an increasing number of overseas-based players and joint ventures. Several dozen Japanese parts firms have established a manufacturing presence in Canada (most commonly via the joint venture route) and these have been joined by at least 40 European-based companies.

*Globalization.* The growing presence of overseas-based parts suppliers as producers in Canada may be said to be one manifestation of the globalization of the automotive industry. Another is the growing consumption of overseas-manufactured components by Canadian vehicle assemblers.

**d) Aftermarket Parts Subsector**

Aftermarket parts and accessories (here defined as all components installed in a vehicle *after* it leaves the point of assembly, including dealer-installed accessories) accounted for 13.8 per cent of total Canadian automotive parts production, or $1.7 billion in shipments, in 1985. At that time, just under 10 000 workers were employed in the production of aftermarket parts in Canada. Much of this output is by OE-oriented parts makers supplying primarily dealer service departments. The remainder is by aftermarket-oriented suppliers, primarily U.S.-owned, but also including some mostly smaller, specialized Canadian players. American-owned firms dominate Canadian aftermarket production more thoroughly than they do the OE sector. The leading Canadian firms include Tridon (wiper blades, signal flashers) and a number of brake part manufacturers. There are numerous small accessories suppliers with local or regional distribution.

Plastic components and stampings were the largest single categories for Canadian aftermarket parts production in 1985, together accounting for about one-third of the total.

**e) Concerns about Future Canadian Competitiveness**

Despite the strong competitive advantages previously discussed, the Canadian share of North American parts production is seriously threatened over the next several years by exchange rate fluctuations and competition from low-cost producers in the southeastern U.S. and Mexico. The US$.85 level, which the Canadian dollar exceeded in late 1989, is considered a critical threshold for Canadian competitiveness in the parts subsector. This situation increases the attractiveness to current or potential Canadian producers of the American "sunbelt" with its lower wage and benefit scales and anti-union "right to work" legislation. Indeed, the southeastern U.S. states at this point represent a more formidable competitive threat to Canadian parts manufacturing than

overseas production of components for North American vehicles.

## 1.2 Canadian Trade, Technology and Investment Flows with the EC

### a) Trade Overview

Canada's automotive trade with the European Community, as with Japan, runs a chronic deficit. In 1988, $242 million worth of automotive products were exported from Canada to the European Community, while imports were valued at $1.35 billion, yielding a negative balance of $1.1 billion (see Table 1).

### b) Assembled Vehicles Trade

The fundamental reason for the continuing automotive trade deficit is the significant level of European passenger car imports into Canada (though the once-dominant position of EC manufacturers in the Canadian import market was lost to the Japanese during the 1970s). Because of Canada's close integration into the U.S. automotive market, exports of Canadian-built cars and trucks to the EC countries have been minimal. Canada exported $154 million worth of assembled vehicles to nine EC countries (excluding Greece, Spain and Portugal) in 1988 while drawing in imports valued at $709 million, yielding a deficit of $555 million.

Canada actually registered a surplus of $57 million in trucks with exports of $70 million versus imports of $13 million. However, passenger car exports of $56 million were dwarfed by imports of $671 million, which yielded a deficit of $615 million.

**TABLE 1**

**Canada-EC* Automotive Trade, 1988**
**(in thousands of dollars)**

| | Exports | Imports | Balance |
|---|---|---|---|
| Engines and engine parts | 7 745 | 167 501 | - 159 756 |
| Other parts | 80 711 | 479 045 | - 398 334 |
| Total parts | 88 456 | 646 546 | - 558 090 |
| Passenger cars | 56 349 | 671 059 | - 614 710 |
| Trucks | 69 799 | 12 972 | + 56 827 |
| Other vehicles | 27 428 | 24 602 | + 2 826 |
| Total vehicles | 153 526 | 708 633 | - 555 257 |
| **Grand Total** | **242 032** | **1 355 179** | **-1 113 147** |

Source: Statistics Canada.

* Excludes Greece, Spain, and Portugal.

Perhaps the largest current exporter of Canadian-built vehicles to Europe is Chrysler Corporation, which is currently scheduling the shipment of 9 000 minivans (assembled at Windsor, Ontario) and 6 000 Jeeps (Brampton, Ontario) per annum to EC countries.

Currently, the only European manufacturer with a significant presence in the small and middle-range car market in Canada is Volkswagen of West Germany, which accounted for 3.4 per cent of total vehicle sales in 1988. The firm's principal European competitors, Fiat, Peugeot and Renault have never enjoyed sustained success in penetrating the Canadian market. Their failures, however, have had more to do with ill-conceived marketing strategies and an inability to establish a stable sales/service network than with cost/price competitiveness.

Apart from Volkswagen, most passenger car imports into Canada from EC countries fall into the luxury or luxury/sports categories (Audi, BMW, Mercedes-Benz, Jaguar, etc.).

**c) Automotive Parts Trade**

Statistics Canada does not maintain separate trade figures for original equipment parts and aftermarket parts. In 1988 Canada registered a trade deficit with the EC in automotive parts that outstripped even the deficit in vehicles -- $558 million versus $555 million. This deficit represents the difference between exports of $88 million and imports of $647 million. The trade figures are further broken down into engines and engine parts (exports of $8 million and imports of $168 million for a deficit of $160 million) and other automotive parts (exports of 81 million and imports of $479 million resulting in a deficit of $398 million).

Much of the deficit is accounted for by imports of replacement parts for the European vehicle fleet on Canadian roads. Also, vehicle assembly facilities in Canada source some types of components -- fuel injection systems, anti-lock braking systems (Bosch-West Germany) and manual transmissions (Getrag-West Germany), engine heads (Teksid -- Italy) -- from European-based parts suppliers. Although most of these components are actually manufactured at North American subsidiary plants, a considerable amount of sub-componentry is nonetheless imported from the home countries. In addition, the Volvo assembly plant in Halifax imports significant quantities of parts, and thus adds to the European parts import total. (Volvo is based in Sweden, which is not an EC country, but it purchases significant volumes of parts from Community Member States.)

Many Canadian aftermarket producers export small percentages of their output to the European Community, but these exports account for only a minuscule proportion of total aftermarket production. Many branch plants are restricted by the parent company in pursuing overseas export markets. The smaller Canadian firms frequently encounter difficulties obtaining national channels of distribution, let alone markets overseas. As is the case in the motor vehicle and OE parts sectors, differences in predominant vehicle types, driving conditions and consumer tastes also present a barrier to expanded European exports.

**d) EC Investment in Canada**

Investments in Canada by European Community-based parts suppliers have not received as much publicity as those undertaken by their Japanese counterparts. Nonetheless, a number of EC companies have sought to exploit Canadian competitive advantages and/or gain access to North American assemblers by establishing production capacity or entering into joint ventures in this country (see Table 2).

**TABLE 2**

**Major European Community Auto-Related Investment in Canada**

| Company | JV partner if applicable | Home country of parent | Product line |
|---|---|---|---|
| A. Berger Precision Ltd. | | W. Germany | Powertrain and anti-lock braking system components |
| Brown Boveri Howden Inc. | Howden Canada Inc. | W. Germany | Heat exchangers, fans |
| Degussa Canada Ltd. | | W. Germany | Catalytic converters |
| Edscha of Canada | | W. Germany | Door hinges, stampings |
| FAG Bearings Ltd. | | W. Germany | Ball bearings |
| Willibald Grammer | Magna International | W. Germany | Seating |
| Kautex Canada Inc. | | W. Germany | Plastic gasoline tanks |
| Kuester Canada Ltd. | Magna International | W. Germany | Mechanical cables |
| Lemmerz | Magna International | W. Germany | Aluminum wheels |
| Joh Rubber | | W. Germany | Engine sealing |
| Oetiker Ltd. | | W. Germany | Clamps and hoses |
| Pebra Inc. | | W. Germany | Exterior trim mouldings |
| Ronal Canada Inc. | | W. Germany | Aluminum wheels |
| Sachs Automotive Components Inc. | | W. Germany | Clutches |
| Treves S.A. | Lear Siegler (U.S.) | France | Seating |
| VDO Yazaki Ltd. | Yazaki (Japan) | W. Germany | Instrumentation |
| Varta Batteries Ltd. | | W. Germany | Batteries |
| Webasto | Magna International | W. Germany | Sunroofs |

Source: Canadian Industry Reports, 1989.

Perhaps the heaviest investment by EC-based manufacturers has been in aluminum wheel production. Aluminum smelting is a highly energy-intensive process, making it expensive in Europe and Japan with their high electricity rates. Canada, by contrast, with its relatively inexpensive electric power, is a highly attractive location for the establishment of aluminum casting facilities. Volkswagen (Barrie, Ontario) has maintained aluminum wheel plants in Canada since the early 1980s.

A leading West German supplier, Ronal, purchased a facility in Fort Erie, Ontario, in 1987, while another, Lemmerz, has entered into a joint venture with Magna International to produce aluminum wheels in Collingwood, Ontario. All the above are currently or are planning to export substantial percentages of their output to their home markets.

In all, there are about 40 European-owned parts facilities in Canada. Almost all are in southern Ontario and most are branches of West German firms.

**e) Technology Co-operation**

There are a number of current and planned examples of technology-sharing between North American and European vehicle manufacturers involving or potentially involving Canadian assembly plants. The Eagle Premier sedan produced at the Bramalea, Ontario, facility by Chrysler was designed by Renault and incorporates a Renault engine and transmission. Chrysler maintained channels of technology-sharing with the French vehicle maker after acquiring its share of American Motors, and the two players are co-operating in the design of the next-generation Jeep. Renault currently markets Chrysler's Jeeps and minivans in Europe.

Joint ventures between Canadian and EC original equipment parts suppliers are in many cases aimed at securing access to European technological expertise in such areas as seating, wheels and sunroofs, while the EC-based partners benefit from access to North American assemblers.

There are few, if any, significant existing technological links between Canadian aftermarket producers and their counterparts in the European Community. Most Canadian aftermarket players are too small to find it feasible to enter joint ventures or technology-sharing agreements.

## 1.3 The EC Automotive Sector

**a) Overview**

The automobile industries of North America, Japan and the EC are of comparable size, each block producing over 12 million cars and trucks per annum. These three major trading areas dominate total world vehicle production estimated at around 48 million vehicles (see Table 3).

The automobile industry in the EC represents almost 10 per cent of total value-added by the manufacturing industry in the Community. However, there are large differences between Member States' involvement in the auto industry. Denmark, Ireland and Greece have little or no production, while vehicle assembly and parts production are key elements in the manufacturing bases of Belgium, France, West Germany, Italy, Spain and the United Kingdom.

The EC's automotive sector provided direct employment for 1.8 million people in 1987. Although this is a loss of 400 000 jobs since 1980, it still represents about 8 per cent of total manufacturing jobs in the Community and almost 2 per cent of total employment.

In the long run, the downward trend in employment levels should continue as productivity investments remain high,

TABLE 3

World Production of Motor Vehicles
(in millions of units)

| | EC | North America | Japan | Total World |
|---|---|---|---|---|
| 1970 | 11.4 | 9.5 | 5.3 | 29.7 |
| 1980 | 11.7 | 9.4 | 11.0 | 38.8 |
| 1989 Forecast | 14.2 | 12.8 | 12.5 | 48.3 |

Source: JAMA, *Automotive News*, DRI.

technical development in assembly substitution leads to further substitution of capital for labour, and output grows slowly.

**b) European Automobile Producers**

European car manufacturers can be divided into two categories: volume or "full line" manufacturers on the one hand and specialist/luxury producers on the other.

*Volume Manufacturers*

Until recently there were eight full-line car manufacturers in the EC: Volkswagen, Fiat, Ford, GM, PSA, Renault, Austin Rover and SEAT. SEAT was taken over by Volkswagen in 1986, while Austin Rover's production has fallen to such low levels that it is questionable whether it can really be termed a volume manufacturer. As a result the EC's passenger car market is now shared fairly evenly among the six major companies (see Table 4).

However, this presentation of market share at a European level can be rather misleading, since it hides great differences in the geographical spread of sales between manufacturers. In fact, most European volume manufacturers are heavily dependent on their national/domestic markets. This is particularly true for the Fiat group which, in addition to its dominant position in the Italian market, has all its European manufacturing facilities based in Italy.

The overall financial performance of the volume producers has substantially improved in 1988 and 1989 due to sustained car sales and continuing rationalization measures. However, in spite of this improvement, some volume producers still suffer from high debt ratios. The question remains therefore whether certain volume car manufacturers will be able to generate sufficient internal cash to finance their projected essential capital investments over the next five years. This is one of the most serious question marks hanging over the industry.

Another challenge for some of the volume producers will come from increased Japanese competition.

TABLE 4

Western European Market Share, 1989

| Manufacturer | % Share |
|---|---|
| Volkswagen (incl. Audi and SEAT) | 14.8 |
| Fiat (incl. Lancia and Alfa Romeo) | 14.8 |
| Peugeot (incl. Citroen) | 12.8 |
| Ford | 11.7 |
| General Motors (Opel, Vauxhall) | 11.0 |
| Renault | 10.3 |
| Rover | 3.1 |
| Mercedes-Benz | 3.2 |
| BMW | 2.8 |
| Volvo | 2.0 |
| Total Japanese | 10.9 |
| All other | 2.6 |
| TOTAL | 100.0 |

Source: Industry estimates, 1989.

Japanese import competition in the EC has been growing steadily over the past decade. Despite import restrictions the overall Japanese penetration in the EC is now similar to the production of one of the major European volume manufacturers (see Table 5).

*Specialist Producers*

The specialist/luxury producers which total about 9 per cent of the market are in a very different situation from the volume producers. The Community has a number of specialist

TABLE 5

Development of Japanese Market Share in the EC, 1978-88

| | 1978 | 1980 | 1982 | 1984 | 1986 | 1988 |
|---|---|---|---|---|---|---|
| Sales of Japanese cars in EC-12 (000s) | 577 | 792 | 702 | 796 | 1 039 | 1 088 |
| Japanese market share (%) | 5.9 | 8.6 | 7.8 | 8.6 | 9.9 | 9.2 |

Source: Marketing Systems, DRI.

manufacturers (Daimler-Benz, BMW, Porsche, Jaguar) to which Volvo and Saab must be added, since both of them also produce in the Community with claimed EC content in excess of 50 per cent.

The European specialists have been highly profitable over the past few years, due in no small measure to their important and highly profitable sales in the U.S. during the period of the high dollar. However, the fall in the value of the dollar clearly has had a negative impact on profits, particularly for those producers who were highly dependent on North America sales.

The European specialists have up to now been largely unaffected by Japanese competition. However, in the U.S. market, the Japanese are upscaling rapidly. Honda has established an up-market dealer network called Acura; Toyota and Nissan are following with Lexus and Infiniti. The Japanese will compete with the EC producers, at least at the bottom end of the luxury segment, and this could have a significant effect on prices and profit margins.

**c) The Automotive Parts Sector in the EC**

*Size and Structure*

The EC automotive components sector employs around 0.6 million people in about 1 500 major supplier firms. There are an additional 10 000 minor suppliers to the EC assembly sectors. The turnover of the sector is estimated at around 66 billion ECU in the Community of which 60 per cent is of original equipment and 40 per cent of replacement parts. This sector also generates a significant trade surplus (primarily with EFTA, North America and the developing countries) which in 1986 amounted to 7.4 billion ECU.

Six European parts suppliers have more than $2 billion worth of automotive sales (see Table 6).

TABLE 6

**Sales of Six European Parts Suppliers, 1988 (in billions of C$)**

| Company | 1988 Parts Sales |
|---|---|
| Bosch | 9.0 |
| Valéo | 3.2 |
| Magneti Marelli | 2.9 |
| GKN | 2.4 |
| Lucas | 2.4 |
| ZF | 2.4 |

Source: Richard Lamming, *The Causes and Effects of Structural Change in the European Automotive Components Industry*, 1989.

In spite of the presence of a number of large, international companies, the European components industry comprises mostly small and medium-sized companies. The average size of the 1 500 major suppliers in Europe is only 400 people, and 55 per cent of these enterprises employ less than 100 people. Only 8 per cent of companies have more than 1 000 employees, although these firms account for 60 per cent of total employment. In fact, 25 leading firms account for 40 per cent of total automotive parts production in the EC.

This continuing industry fragmentation is due in part to the nationally based nature of parts procurement. Although intra-EC trade has increased quite rapidly in this sector, most vehicle manufacturers source largely from their domestic suppliers. For instance, Daimler-Benz procures 90 per cent of its equipment from West Germany, Austin Rover 87 per cent from the U.K., and Renault 70 per cent from France.

Most component suppliers, particularly the small and medium-sized ones, are dependent upon their national car producers.

*Evolving Environment for EC Parts Producers*

The EC automotive industry search for increased competitiveness implies, amongst other things, a fundamental change in the nature of relationships between automobile manufacturers and component suppliers.

As is the case in Japan and North America, EC vehicle assemblers are increasing their outsourcing and passing to their suppliers (first tier and/or affiliated specialized companies) the responsibility for product development, manufacturing and quality assurance functions.

The result is that many smaller EC suppliers will come under pressure. At all levels there are bound to be many more mergers and joint ventures to reduce development costs, and a considerable "shake-out" is unavoidable as the industry concentrates into larger units achieving greater scale economies.

Obviously much of this restructuring is already taking place. Vehicle manufacturers are cutting back on their number of suppliers and offering longer contracts and closer co-operation to "preferred" component producers.

For example, the following reductions in supplier numbers have taken place:

- Ford of Europe -- from 2 500 to 900 in past five years
- Renault -- from 1 415 to 900 since 1985
- Austin Rover -- from 1 200 to 700
- PSA -- from 2 000 in 1981 to 950 by 1988

In the 1990s, the number of suppliers will become even smaller, as single sourcing could become a normal practice. The "preferred" suppliers will increasingly sub-contract to smaller producers, leading to the development of a tier system, a little like the Japanese model.

**d) New Sources of Competition for the EC Automotive Industry**

*Japanese Vehicle Production in the EC*

Nissan (U.K.) is planning to produce 200 000 cars by 1992, with 80 per cent EC content. Honda now has its CKDs (Completely knocked downs) assembled in the U.K. by the Rover Group. It supplies component kits for

incorporation into a number of Rover models and has co-operated in developing new models. Honda has also built an engine plant in Britain. Toyota has already announced its intention to set up EC production in the U.K. for another 200 000 cars by 1992.

Other Japanese producers, notably Mitsubishi and Subaru, are evaluating car production in Europe. A number of them are already active in light commercial vehicle assembly. The European industry is keen that the European content of the cars produced by Japanese producers should be as high as possible, so as to encourage the maximum participation of the EC component industry.

*Japanese Components Production in the EC*

There are as yet relatively few Japanese parts investments in Europe (almost 30 plants in 1989) but the number is increasing steadily as the rapid increase in Japanese automotive production and assembly in Europe continues. At first many of these investments will be joint ventures with European companies. These suppliers will not just be content with supplying Japanese transplants, but will try for a bigger share of the total European market.

It has been predicted that over the next decade as many as 100-150 of the largest parts suppliers in the EC will be Japanese companies.

*Cars Exported from the U.S. by Japanese Producers*

The Japanese will have the capacity to produce 2.3 million cars in North America by 1990. In view of the spare capacity available in the U.S. coupled with a possible continued fall in the value of the dollar, some of these cars could be exported to Europe.

Honda has taken the lead in this respect. It is now committed to exporting 70 000 units per year from its U.S. plant by 1991. Some 50 000 of these are scheduled to go back to Japan, but most of the remaining 20 000 are thought to be destined for Western Europe.

*Japanese-Designed Cars Exported from Eastern Europe*

The possible production of Daihatsu cars by FSO in Poland, and their subsequent export to Western Europe has highlighted the potential for the Japanese producers to take advantage of low-cost Comecon countries as a means of improving the competitiveness of their cars in Western Europe. At the moment the East Europeans produce only very basic, outdated models, and hold about 1.5 per cent of the EC market. However, it is clear that their producers are seeking to improve the quality of the next generation of vehicles to make them more attractive to Western markets.

*Korea and Other NICs*

By the early 1990s, Korean car production capacity will total 1.7 million units. Hyundai sold 325 000 cars in North America in 1988 (from 62 000 in 1985) and Kia and Daewoo are now supplying small cars to Ford and GM in the U.S. market.

Currently the Korean manufacturers have only a small presence in the European market (about 20 000 vehicles) but their low costs, coupled with the crowded U.S. market, could soon make them serious competitors in Europe, either as independent producers (especially Hyundai) or as low-cost sources of cheap cars for the U.S. or Japanese multinationals.

Korea's potential as a source of automotive parts is also very great.

In the longer term, newly industrialized countries (NICs) such as Taiwan and Malaysia could also present a threat to the European market. Ford is already importing Taiwanese cars for the Canadian market, and Nissan is planning to sell some Taiwanese-built cars (produced by Yue Loong) in Japan. Malaysia has begun exporting its Proton Saga to the U.S. in 1988, and exports to the U.K. are also envisaged.

## 2. EUROPE 1992: AUTOMOTIVE SECTOR DEVELOPMENTS

### 2.1 Existing Barriers to Automotive Trade within the EC

The EC automobile market is highly fragmented due to technical, fiscal and physical barriers that undermine the creation of a "single market." The major barriers include:

- a lack of standardization of national technical requirements;
- widespread differences in exhaust emission requirements of Member States which can lead to costly modifications being necessary before a car fits the requirements of an importing state;
- various national requirements for the standard equipment of vehicles such as yellow headlamp bulbs in France, dim-dip headlamps in the U.K., etc.;
- wide taxation differences on car sales in different Member States, ranging from over 200 per cent in Denmark to 12 per cent in Luxembourg;
- inconsistent rates of tax payable for the annual usage of a car from Member State to Member State;
- differing attitudes to government intervention in the national car industries which may distort free competition (subsidies, loans, debt write-offs, etc.);
- difficulties in the form of excess paperwork, long delays, etc., involved in the shipping of parts and vehicles.

Each of these elements serves to compartmentalize the Community market with significant costs to producers and consumers. Recent surveys have indicated the large savings that would occur if the EC car industry could become totally integrated across the board including manufacturing, marketing and distribution. This rationalization of the market could increase the demand for new cars and cut non-EC imports.

### 2.2 The EC's 1992 Strategy for the Automotive Sector

The general objective of the EC's automotive strategy is to provide a regulatory environment that enables the auto sector to derive the full benefits from the largest single automotive market in the world.

The major 1992 regulatory changes that will impact on the automotive sector include:

*Reduction of technical obstacles to trade.* Type-approval accounts for a very substantial amount of EC legislation in the area of motor vehicles. Type-approval can be succinctly summarized as an effort to harmonize, at the Community level, the technical requirements of motor vehicles which hitherto have varied from state to state and therefore constituted a barrier to free trade. Once a certificate of conformity is issued by the authorities of a Member State, if a specific technical requirement laid down at Community level is met, this certificate must be recognized by all other Member States.

The Commission will continue to submit to the Council the draft Directives required to complete the type-approval of cars.

Furthermore, the Commission will also submit to the Council in 1990 a draft revision of framework Directive 70/156/EEC to allow technical

harmonization in the area of motor vehicles to be fully implemented.

Fewer technical barriers to trade will increase the competitiveness of European automobile producers. European firms will be able to devote more of their R&D efforts to new product development as opposed to adaptive engineering. The reduced complexity of model development and production will also lead to cost savings in the final product.

*Tax harmonization*. The Commission has asked the Member States to make significant efforts in the harmonization of value-added tax (VAT) rates applied to cars, without waiting for the conclusion of the work under way within the Council concerning the elimination of tax borders and the harmonization of VAT rates in general.

The Commission considers that taxes of such levels as appear excessive in relation to the general framework of the national taxation system have an effect equivalent to that of obstacles to trade. In relation to expected rulings by the Court of Justice on these questions, the Commission will take necessary measures to promote progress in this area on a case-by-case basis to ban or cut additional purchase or registration taxes like those charged in Greece and Denmark.

The harmonization of VAT rates to between 14 and 20 per cent across the Community will result in very significant price reductions in some Member States -- France, Italy, Spain -- and result in much stronger consumer demand. VAT changes and user tax changes will also affect the consumers' choice of car size and thereby affect production and marketing decisions by automobile producers.

Excise tax changes will alter the operating cost of a vehicle and will influence the choice of gasoline versus diesel engines. This too will affect production decisions.

With respect to EC efforts to achieve harmonization of VAT across Member States, it now appears less and less likely that such harmonization will come about by the end of 1992. Differences among Member States are strong and are unlikely to be resolved in the short term. However, this remains a priority for the Commission and progress can be expected over the medium term.

*Government subsidies*. The strict containment of government subsidies which distort competition is a necessary component of an effectively functioning Single Market. The two most important instruments used by the Commission to enforce compliance are:

- the policy of forcing reimbursement of illegal state aids;

- the requirement that prior notification must be given to the Commission on all proposals to grant government aid, in whatever form, where the cost of the project to be assisted exceeds 12 million ECU.

Clearly, governments in the Member States will be much more constrained in their ability to intervene on behalf of "national champions." As a result new investments, restructuring, mergers and acquisitions should take place more readily and more freely throughout the Community.

*EC-wide road worthiness tests for motor vehicles*. Periodic road worthiness tests have been carried out for some years in Germany, Belgium, Luxembourg, Italy and the U.K. The Netherlands and Greece introduced testing in 1985. In other countries mandatory testing does not apply to passenger vehicles or light trucks.

The Commission proposes to introduce legislation that would require mandatory testing of passenger and goods vehicles below 3.5 t. Once the system was running fully, there would be a test after three years of operations, and another after five years to introduce *earlier* and *more frequent* tests.

The tests would cover a specified list of items including braking, steering, seat belts, wheels, suspensions, chassis frame, noise, suppression of radio interference and exhaust emissions.

Clearly this legislation could lead to a significant increase in the demand for replacement parts in a number of Member States.

*Pollution standards*. The efforts to achieve a "clean" car within the Community are resulting in stricter standards on car exhaust gaseous emissions.

A group of new Directives has been adopted for private car emissions. The Directive on small car emissions provides for mandatory norms from 1992 onwards. The new norms are comparable to U.S. standards and on the basis of available technology can only be met by three-way catalytic converters. The Commission hopes that by 1992 advances in lean burn technology will be sufficient to meet the new standards.

Voluntary EC standards for medium-size and large cars are also expected to be tightened by 1993.

*Competition policy*. EC legislation recognizes that, due to the special nature of this industry, it is necessary that the distributors of motor vehicles be allowed a certain degree of exemption from the standard EC rules on competition. The main argument for exemption is that distribution agreements of a selective or exclusive nature are usually indispensable measures of necessity. The co-operation between the manufacturer or importer and a number of selected dealers and repairers guarantees the provision of specialized servicing for the product.

However, a number of conditions are attached to this exemption to safeguard effective competition. Two of the most important conditions for aftermarket suppliers are:

- Consumers can have servicing or repairs done under the manufacturer's warranty anywhere in the Common Market.

- Spare parts supplied by third parties that match the quality of those supplied by the automotive manufacturer can be sold and used in the official distribution network.

*EC-wide import quotas*. Individual Member States have adopted widely divergent policies for dealing with Japanese competition. West Germany and the Benelux countries, for example, place no restrictions, other than the standard EC tariff. In contrast, Italy and France have held Japanese car imports to very low quota levels.

In order to establish a Single Market, national restrictions will be eliminated by the end of 1992, and a detailed program and schedule for the progressive dismantling of these restrictions between now and the end of 1992 drawn up. After 1992 it will not be possible for individual Member States to control imports of vehicles into their territories, as there would be no way of controlling imports that transit other Member States. The Commission, however, appears to have reached the conclusion that some sort of transitional measure will be required to prevent a surge in Japanese

imports. Speculation is that the transition period will last about five years, but will allow some growth in Japanese imports. Restraint would not take the form of quotas, but rather some sort of export monitoring on the part of the Japanese, who have already indicated that they would likely co-operate.

With regard to imports from Japanese transplant facilities in North America, the Community appears to have reached the conclusion that these would not be included in any restraint agreement. It is expected that any vehicle considered by Canada and the U.S. as being "North American" under the Free Trade Agreement would be considered North American for purposes of import to the Community.

*Local content*. The local content issue revolves around the question of whether a certain minimum mandatory percentage should be fixed for European content in foreign cars manufactured or assembled in the Community. Local content appears no longer to be an issue. The European Community apparently has no intent of introducing local content provisions for the auto industry and indeed, Nissan and Toyota are both expected to reach 80 per cent content, which is a level well in excess of any level that could be attacked in the European Court of Justice.

Local content only becomes an important trade issue when used to block imports from third countries, thereby impairing their GATT rights.

*Abolition of border barriers*. Border controls between Member States result in significant costs for automotive producers in the EC. Direct costs arise from meeting existing border formalities; indirect costs occur because of delays, which influence inventory, buffer stocks, etc.

The abolition of frontier controls and formalities that slow the physical movement of goods will, therefore, result in important cost and efficiency improvements. These improvements should accrue to European firms and importing firms alike.

### 2.3 Structural Changes in the EC Automotive Sector

#### a) Vehicle Manufacturers

EC vehicle manufacturers are now facing the most challenging and competitive period in their history. The creation of the unified internal market will further boost internal and external competition which in turn will change the face of the industry. Companies will continue to restructure, merge and pursue other forms of strategic alliances. Although the market is not expected to grow by more than 1 to 2 per cent per annum, it should continue to be the largest world market for passenger cars with scope for growth (in terms of value), as European consumers shift to more upscale cars. All major world players will treat the EC as an "open play" market and strategies under development will be aggressively implemented.

Despite the current apparent good shape of the industry there are signs of uncertainty about the future. In particular concerns centre on:

- the inadequate scale, profitability and financial capability of several operators in light of investment requirements planned for the near future;

- the instability of competition between six nearly equal volume producers which, coupled with increased penetration of non-EC producers, should result in growing pressure over profit margins;

- the competition with potential Japanese operations in Europe who are now also moving upmarket towards the most profitable segments and increasing penetration in markets where they still have limited access;

- a potential increased flow of U.S. exports from both "transplant" Japanese and U.S. manufacturers; and

- the emergence of new producers in the Asia-Pacific area which are preparing large- scale production for export to Western markets.

At present the European producers control a large part of their domestic markets as well as the high-value export market to the U.S. In the future, several new Japanese players will most probably join the large producers in Europe and strive for access to the upper segments. If this materializes, shifts in ownership of capacity are likely to occur.

**b) Parts Producers**

It is likely that the market for auto parts and components in Europe will expand rapidly over the next decade to reach around 90 billion ECU in the 1990s (from the current 60 billion ECU), although the actual level of vehicle production is unlikely to increase significantly. This development will take place for the following reasons:

- increased sophistication of vehicles which will be standard-fitted with increased automotive electronics applications, anti-pollution devices, more efficient safety restraint systems, etc.;

- general "up-market" move in car demand with consumers demanding more equipment, comfort and power;

- increased out-sourcing by car manufacturers of components with high value added;

- potential of access to the Japanese replacement market as a result of the growing fleet of European cars in Japan (providing European exports to the other areas remain stable); and

- growing aftermarket for replacement parts because of an increasing number of vehicles in circulation, a trend that will continue; between 1971 and 1985, the number of cars in use in the EC rose from 59 million to 116 million, and by 1993 a fleet of 129 million vehicles is forecast.

Despite the bullish market outlook for EC parts producers, significant rationalization and restructuring is expected. Aside from the few major Western European parts suppliers, most companies are relatively small by world standards and growth by acquisition features strongly in their expansion plans. As a result of technology developments and "systems" sourcing, vehicle assemblers in Europe will increasingly restrict their purchases to a very much smaller first tier of parts suppliers. These, in turn, will develop relationships with a smaller number of second and third tier suppliers.

## 3. EUROPE 1992: IMPACT ON THE CANADIAN AUTOMOTIVE SECTOR

### 3.1 Overview

It is difficult to examine the potential impact of Europe 1992 on Canada's automotive industries in isolation of the competitive developments that are reshaping the industry worldwide. The current and expected restructuring of the European Community's motor vehicle and parts industries is only partly a result of the Single Market program. As such Europe 1992 is an important factor determining the nature and extent of Canadian export opportunities, but it is not the dominant factor.

### 3.2 Export Opportunities — Vehicles

Europe and North America are and are likely to remain different markets for passenger cars. Much of this difference is dictated by Europe's higher fuel prices, narrow roadways and greater urban crowding. For example, a large percentage of the European market is oriented to cars with engine displacements of 1.5 litres or less and very spartan trim levels -- vehicles unacceptable to the vast majority of North American consumers (though "dressed up" versions of such models can appeal to niche markets in Canada and the U.S.). Also, European consumers' demands regarding drivetrain performance are geared to high rpm responsiveness, while their North American counterparts place a premium on torque output at lower engine speeds. Thus, most domestically assembled cars feature relatively slow turning, high displacement overhead valve-type engines that are at best marginally acceptable in the European market. Prevailing tastes in exterior colours and interior trim styling and material diverge widely between the two continents. In North America there is a strong emphasis on quiet and convenience, while in the EC countries there is a widespread disdain for the "mobile living room" nature of the cars desired by U.S. and Canadian motorists. Fuel economy considerations further militate against the wider acceptance in Europe of comfort/convenience features such as automatic transmissions and air conditioning.

The European truck market will remain largely a distinct entity as well. Maximum length requirements mean that "conventional"-type (versus cab-over-engine-type) medium- and heavy-duty trucks are practically unknown in Europe. The prevalence of narrower streets and highways also exerts a restrictive influence on medium- and heavy-duty truck design.

In the light truck market, pickup trucks are a rarity in Europe; light commercial vehicles are generally vans or van-based designs. High fuel prices mean there is no market in Europe for North-American-type full-size vans and pickup trucks with high-displacement engines. Conversely, European light trucks are generally considered too underpowered for widespread North American applications.

Representatives of the Big Three vehicle manufacturers expect North American exports of passenger cars and light trucks to the European Community to reach 200 000 in the years immediately following 1992. This will still account for less than 1.5 per cent of total North American production. Exports will primarily be made up of niche models such as minivans and sport/utility vehicles. Two of the leading export models, the Plymouth Voyager/Dodge Caravan minivans and the Jeep YJ, are built at Chrysler plants in Canada.

While the leading Japanese manufacturers have solidly committed themselves to building assembly capacity in the EC, the possibility still exists that they may elect to supplement European production

with imports of North American-built vehicles, especially if currency values are favourable. North American exports will likely primarily be made up of specialty cars (such as the Honda Accord coupe now being exported from the Marysville, Ohio, assembly facility to Japan), minivans and sport-utility vehicles. Production capacity for the Hyundai Sonata sedan built at the Korean firm's plant at Bromont, Quebec, at 100 000 units annually, exceeds current or projected North American demand. It thus emerges as a prime candidate for export to the EC.

### 3.3 Export Opportunities -- Original Equipment Parts

It has been speculated that Europe 1992 will accelerate the trend towards the "globalization" of the motor vehicle industry, that is, the sharing of components and to some extent, platforms across continents by multinational vehicle companies.

In recent years, the Detroit-based automakers have been seeking to draw on the technological expertise of overseas-based parts suppliers in such areas as fuel injection, anti-lock braking systems and manual transmissions. Ford has taken the notion of globalization one step further by announcing a "world car" program beginning with the 1994 Ford Tempo/Mercury Topaz (North America) and Ford Sierra (Europe), which will share a common platform.

Current initiatives towards globalization offer the potential for expanded trade in original equipment parts between Canada and the European Community. These opportunities will likely focus on areas of comparative technological advantage, such as fuel injection and anti-lock braking systems for European firms, emission control systems and climate control for North American parts suppliers. A particular area of advantage for Canada is heavy aluminum castings, due to the availability of low-cost electric power.

However, "globalization" will by no means result in identical vehicles being built and sold on both sides of the Atlantic. The wide variations in conditions and consumer tastes between the European and Canadian markets will limit the extent of component sharing.

Export opportunities for original equipment parts will also be restricted somewhat by the changing nature of supplier-assembler relationships. Pressures for rationalization of the European Community's parts sector can be expected, on the one hand, to open up the components market to global sourcing. On the other hand, it will reinforce the perceived need for physical closeness of suppliers to assemblers as a tier structure develops (albeit more slowly than in North America). Also, the expected reduction in the total number of OE parts suppliers can be expected to raise barriers to entry by new players. Consequently, most Canadian parts manufacturers looking at gaining a share of the EC market will likely opt for joint ventures involving a manufacturing presence in Europe.

Despite these general trends toward a rationalization of the supplier base and closer relationships between an assembler and a small number of suppliers, significant opportunities for direct export sales exist for smaller-scale suppliers to niche markets. Glas-Aire Industries, a Langley, B.C., plastics firm that supplies sunroof air deflectors to a number of European luxury vehicle assemblers is a prime example.

### 3.4 Export Opportunities -- Aftermarket Parts

Exports to the European Community will continue to constitute a very small

percentage of Canadian replacement parts and accessories production after 1992.

A minority of branch plants have mandates to export overseas (though this situation may gradually change under the Free Trade Agreement as the operations of branch plants are rationalized). In addition, many Canadian producers are currently feeling intense pressure from parts proliferation in the North American market. The European market, with its even greater array of competitors in the motor vehicle sector and wider range of engine and drivetrain types, is perceived as a difficult market by many firms. Finally the EC-wide Eurowarranty system which will be put in place after 1992 could serve as a tool for vehicle manufacturers who might wish to tighten their control over the aftermarket (which is already considerably stronger than that exercised by the Big Three in North America) and block access to non-OE suppliers.

The best Canadian aftermarket export prospects, then, are non-branded components and accessories. The U.K. market is seen as the most open to import penetration at present, due to the high import share of the passenger car market (50 per cent). Another potential source of added export business may be the growth of vehicle exports to the EC after 1992, which will translate some years down the road into a demand for replacement parts. Due to rigid inspection and certification requirements, those aftermarket suppliers with OE business will be in an advantaged position to serve this market.

Because of the niche-specific nature of many aftermarket components, opportunities will continue to exist in other areas. Accessories, in particular, display prime potential for export growth, due to the flexibility they offer in creating and developing niche markets. With the exception of power-enhancing accessories, testing standards should not represent a serious barrier to entry. The growth and upscaling of the EC new car market will generate considerable expansion of the accessories market in the EC over the next several years.

On the other hand, imports of aftermarket parts and accessories from EC countries have the potential to increase significantly after 1992. Many of the leading EC aftermarket exporters to the North American market are large OE-oriented firms such as Bosch, Hella, Lucas and Valéo which might benefit significantly from rationalization of the European market. They may thus emerge in a strengthened position to compete in Canada.

### 3.5 Joint Ventures

Canadian manufacturers who wish to be more than niche marketers in the European Community will have to consider investments in Europe, often in a joint venture form with European companies who are already accredited suppliers to the European assemblers.

Clearly in order to proceed with a joint venture it will be a prerequisite that a Canadian supplier have something "to bring to the table" in addition to high quality at low price. A key factor for Canadian parts manufacturers wishing to establish a major presence in Europe will be proprietary technology.

While there is only a small number of Canadian manufacturers such as Magna, the Woodbridge Group and Alcan that have the capabilities to act as "full-service" suppliers in Europe, opportunities will exist for smaller firms. These opportunities are more likely to be in the form of technology licensing than direct investment.

The rationalization of the European Community's parts subsector, which will be accelerated by the Single Market

program, will bring about the emergence of more "world class" European parts firms. These will likely follow the lead of their United States and Japanese counterparts and seek to establish a presence on all three major auto-producing continents. Some may seek to exploit Canadian cost and technology advantages by establishing subsidiaries or joint ventures or purchasing existing players in Canada. Europe 1992 can reasonably be expected to increase the number of EC-based subsidiaries and joint ventures operating in North America and will certainly increase the probability of such new operations in Canada. Joint ventures will be particularly attractive to European players seeking to establish a presence in Canada. Due to the restructuring of the North American parts subsector, links to established North American parts players will be a substantial asset.

One Canadian advantage of particular interest to European investors is low-cost hydroelectric power. This is of particular importance in aluminum casting, as exemplified in the substantial investment in aluminum wheel capacity in Canada in recent years. Emission controls systems represent another area where Canada possesses comparative advantages over Europe, as Canadian engine parts producers have dealt with emissions regulations for two decades, versus a few years in the European Community.

### 3.6 Technology Sharing

Technology sharing in the parts subsector between Canada and the EC may become more extensive after 1992 if Canadian players extend their presence in the Community, either through establishing plants or forming joint ventures.

Rationalization of the North American and European automotive parts industries is making technology an increasingly critical competitive factor in the OE sector. High quality at low price is currently an absolute minimum requirement for remaining competitive. New entrants, then, must have something unique to offer in the way of technological innovation. This situation will create opportunities for small- to medium-sized, flexible and innovative parts companies based in Canada. Product and process improvements that improve quality and reduce costs should find a ready audience among leading European components suppliers and vehicle assemblers.

Similarly, tapping into the established technological expertise of EC-based players through technology sharing agreements may provide parts firms operating in Canada with a critical competitive advantage.

## 4. STRATEGIES AND ACTIONS FOR CANADIAN FIRMS

To take maximum advantage of the opportunities of the creation of the Single Market in the EC by 1992, Canadian firms, especially OE parts suppliers, must contemplate the actions that are outlined in the following paragraphs.

### 4.1 Actively Seek Opportunities in the EC

The reduction of in-house supply by most European vehicle producers will give outside parts suppliers opportunities for the new models coming on stream. Canadian parts firms looking to supply EC vehicle producers will find that over time they will face less and less bias against non-European suppliers.

The key success factor for those Canadian firms that, to date, have been successful in the EC automotive market has been the entrepreneurial drive to seek out opportunities and make them happen.

Unfortunately a recent survey of parts manufacturers in Canada indicates that too few Canadian firms are aware of Europe 1992, its implications, and the opportunities it offers. As long as the great majority of Canadian parts manufacturers are focused primarily on adjusting to the structural changes in the North American industry, new opportunities in the EC and (with European partners) in North America will be lost.

Canadian government representatives in Ottawa and the EC (as well as provincial trade representatives) can be very useful sources of specific information, contacts and introductions.

### 4.2 Build on Strengths

It will be a prerequisite that a Canadian supplier have something "to bring to the table" in addition to high quality at low price. A key factor for Canadian parts manufacturers wishing to establish a major presence in Europe will be proprietary technology.

EC assemblers are increasingly looking for long-term relationships with suppliers, who often must have their own quality control, labs and engineering facilities. Suppliers are involved in product development and must be able to deliver to schedule.

Even in the niche product areas only those companies with engineering capabilities are likely to be successful in the long term in the European market.

### 4.3 Develop Effective Promotional Material

Canadian firms continue to have a low profile in the EC market and will have to take specific steps to make EC assemblers aware of their capabilities. This will involve developing comprehensive targeted documentation and A/V material on the firm, its products, its technologies and its capabilities, dealing in the language of the target client.

### 4.4 Take a Long-term Perspective

Potential Canadian parts suppliers to the EC should realize that it could be costly to meet the standards of certain EC vehicle producers and that it could take considerable time before a supplier is accepted.

Some EC vehicle producers have suggested that a starting point for Canadian suppliers would be in bidding on replacement parts business and as the EC firm became more confident with the suppliers' capabilities in terms of quality engineering costs and scheduling

performance they would gradually assume larger orders, become members of the corporate "family" and work with design and engineering to become regular OE suppliers. This could take considerable time and Canadian suppliers must be prepared to follow this route unless they have some startling new products to offer at cost-competitive prices.

### 4.5 Take a Strategic Approach to Market Entry

*Export Options*

It will often be very useful to use the Canadian or North American representatives of the EC vehicle producers as an initial point of entry.

Duty remission programs will continue to provide some leverage for potential Canadian suppliers to the EC until the end of 1998.

Another alternative is for Canadian parts producers to use their links with Ford and GM in the North American market to get direct or indirect access to the European market, through those companies' EC subsidiaries.

*Joint Ventures/Strategic Alliances*

In the OE market, the joint venture/marketing alliance route with a European partner will often be an effective strategy into the European market. This entry strategy addresses barriers raised by the tiering of the parts industry and related supplier rationalization.

There is an increasing number of examples of Canadian firms entering into JVs with firms in Europe. One such example is the ABC Group's reciprocal joint venture with WOCO (Franz Josef Wolf and Co.) in Germany and North America for marketing, development and production of ABC's range of blow-moulded products for the European automotive industry and WOCO's range of engine mounts for North America.

Suppliers of "hard" replacement parts might be best advised to establish a joint-venture presence within the EC and follow on OE-style strategy. Such an arrangement would help in dealing with the Eurowarranty and the dominant position of OE-oriented players such as Bosch and Valéo.

*Consider Establishment of a European Presence*

EC vehicle producers have also stressed the need for Canadian parts companies to have representatives in Europe in order to successfully pursue major parts orders. Competition in Europe is keen and without having European representation or a European presence they would face problems in communications regardless of the price/technical merits of products.

Some Canadian firms will have to consider establishing a manufacturing operation in the EC. This move to establish a manufacturing presence close to the point of assembly is due to the emergence of a tier structure in the auto parts industry and the related rationalization of the supplier base.

The emergence of a tier structure in the parts industry is placing increasing pressures on component suppliers to locate facilities geographically close to customers. As vehicle assemblers move toward the "black box" or "grey box" concept, under which the automakers provide only broad design parameters and suppliers undertake an increasing share of design and R&D work, there are obvious tendencies for close geographical proximity between the assembler and the operations of the supplier.

Transportation costs and lead times and the psychological need for physical closeness will contribute to this situation. These barriers to direct export sales will not be eliminated by the Single Market program. Indeed, they may be strengthened as rationalization reduces the number of players in the parts subsector and tightens links between survivors and the vehicle manufacturers.

This process of rationalization is the second major element that will influence parts suppliers who wish to supply the European market to make some form of investment in Europe.

A major outcome of Europe 1992 will be the acceleration of the process of rationalization of the supplier base in Europe. The number of major parts manufacturers supplying European assemblers is expected to be reduced from approximately 1 500 to under 1 000. As a result, it will be even more difficult for new entrants, especially those from outside Europe, to gain access to the original equipment market.

### 4.6 Anticipate Increased Competition from EC Firms

Rationalization and reduction of direct and allocated unit production costs in the EC motor vehicle industry may result in intensified competition from European nameplates in the lower and middle price ranges.

Many existing European parts firms will be forced to merge to remain competitive. Surviving European players may emerge in a strengthened position to compete in world, including North American, markets.

## CONCLUSION

Once the EC's 1992 program is completed, the 12 countries of the European Community will make up the largest single automobile market in the world.

Although it is probable transitional measures will be taken to prevent a disruptive surge in Japanese imports after 1992, a "Fortress Europe" scenario is considered unlikely for automobile imports generally, and those from North America in particular.

The next decade will see continued growth in the automobile market in the EC. The parts sector is expected to experience strong growth as a result of the increased technical sophistication of vehicles and the growing demand by European consumers for more equipment, comfort and power.

Important opportunities will also open up for EC-based parts producers as a result of developments in Eastern Europe. Eastern bloc producers are expected to produce 4.5 million automobiles annually by the end of the century, and they will be seeking joint ventures and technology transfer, especially with suppliers with a presence in Western Europe.

The creation of a single integrated automobile market in the EC will present Canadian-based automotive firms with new challenges and new opportunities. Niche opportunities will increase for firms in all the major subsectors (vehicle assembly, OE parts, and aftermarket parts) especially for those companies that have unique products and proprietary technologies.

The restructuring that is taking place in the European automobile industry will lead to more globally competitive firms, as well as to changes in supplier relationships in Europe. These developments will result in joint-venture and technology-sharing opportunities for Canadian parts producers, both in the EC and in North America.

The keys to success for Canadian firms in the new European market will be drive and vision. Only those companies in Canada that are prepared to actively seek out opportunities and take a strategic approach to the European market are likely to be successful over the long term.

## APPENDICES

A: Supplementary Tables

B: Charts

## APPENDIX A: SUPPLEMENTARY TABLES

TABLE A.1

North American Production of Motor Vehicles, 1965-88
(in thousands of units)

| Year | Canada | | United States | | Total North America | |
|---|---|---|---|---|---|---|
| | Volume | Per cent | Volume | Per cent | Volume | Per cent |
| 1965 | 846 | 7.1 | 11 114 | 92.9 | 11 960 | 100.0 |
| 1966 | 902 | 8.0 | 10 363 | 92.0 | 11 265 | 100.0 |
| 1967 | 947 | 9.5 | 8 992 | 90.5 | 9 939 | 100.0 |
| 1968 | 1 180 | 9.9 | 10 794 | 90.1 | 11 974 | 100.0 |
| 1969 | 1 353 | 11.7 | 10 182 | 88.3 | 11 535 | 100.0 |
| 1970 | 1 193 | 12.6 | 8 263 | 87.4 | 9 456 | 100.0 |
| 1971 | 1 373 | 11.4 | 10 650 | 88.6 | 12 023 | 100.0 |
| 1972 | 1 474 | 11.5 | 11 297 | 88.5 | 12 771 | 100.0 |
| 1973 | 1 575 | 11.1 | 12 663 | 88.9 | 14 238 | 100.0 |
| 1974 | 1 564 | 13.5 | 9 984 | 86.5 | 11 548 | 100.0 |
| 1975 | 1 442 | 13.9 | 8 965 | 86.1 | 10 407 | 100.0 |
| 1976 | 1 647 | 12.5 | 11 486 | 87.5 | 13 133 | 100.0 |
| 1977 | 1 775 | 12.3 | 12 699 | 87.7 | 14 474 | 100.0 |
| 1978 | 1 818 | 12.4 | 12 895 | 87.6 | 14 713 | 100.0 |
| 1979 | 1 632 | 12.5 | 11 475 | 87.5 | 13 107 | 100.0 |
| 1980 | 1 374 | 14.6 | 8 010 | 85.4 | 9 384 | 100.0 |
| 1981 | 1 280 | 13.9 | 7 941 | 86.1 | 9 221 | 100.0 |
| 1982 | 1 236 | 15.0 | 6 985 | 85.0 | 8 221 | 100.0 |
| 1983 | 1 502 | 14.0 | 9 226 | 86.0 | 10 728 | 100.0 |
| 1984 | 1 830 | 14.3 | 10 924 | 85.7 | 12 754 | 100.0 |
| 1985 | 1 930 | 14.2 | 11 648 | 85.8 | 13 578 | 100.0 |
| 1986 | 1 859 | 14.1 | 11 317 | 85.9 | 13 176 | 100.0 |
| 1987 | 1 648 | 13.1 | 10 908 | 86.9 | 12 556 | 100.0 |
| 1988 | 1 977 | 15.0 | 11 238 | 85.0 | 13 215 | 100.0 |

Source: *Ward's Automotive Yearbook* and MVMA.

## TABLE A.2

### North American Transplant Capacity (Passenger Cars)

| Facility | Location | Output - (in thousands of units) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | (Actual) | (Projected) | | | | | | |
| U.S. | | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 |
| NUMMI | Fremont, CA | 135 | 144 | 147 | 171 | 186 | 199 | 197 | 189 |
| Diamond-Star | Normal, IL | - | 45 | 92 | 145 | 186 | 223 | 221 | 210 |
| Subaru/Isuzu | Lafayette, IN | - | - | 30 | 55 | 67 | 71 | 73 | 71 |
| Toyota | Georgetown, KY | - | 75 | 164 | 206 | 233 | 240 | 257 | 251 |
| Mazda | Flat Rock, MI | 148 | 189 | 229 | 247 | 252 | 249 | 247 | 234 |
| Honda | Maryville, OH | 366 | 366 | 341 | 354 | 375 | 390 | 387 | 383 |
| Honda | East Liberty, OH | - | - | 50 | 124 | 149 | 165 | 177 | 178 |
| Nissan | Smyrna, TN | 110 | 104 | 124 | 135 | 188 | 207 | 210 | 207 |
| Volkswagen | Westmoreland, PA | 36 | - | - | - | - | - | - | - |
| **Total** | | **795** | **923** | **1 177** | **1 437** | **1 636** | **1 744** | **1 769** | **1 723** |
| **Canada** | | | | | | | | | |
| CAMI | Ingersoll, ON | - | 8 | 44 | 73 | 96 | 111 | 117 | 118 |
| Honda | Alliston, ON | 50 | 81 | 88 | 98 | 104 | 105 | 103 | 102 |
| Hyundai | Bromont, PQ | - | 12 | 42 | 64 | 86 | 91 | 92 | 88 |
| Toyota | Cambridge, ON | - | 15 | 52 | 61 | 66 | 87 | 95 | 93 |
| **Total** | | **50** | **116** | **226** | **296** | **352** | **394** | **407** | **401** |
| Total North America | | 845 | 1 039 | 1 403 | 1 733 | 1 988 | 2 138 | 2 176 | 2 124 |

Source: DesRosiers Automotive Research Inc.

TABLE A.3

EC Motor Vehicle Sales by Country, 1987-88

| | 1988 | | | 1987 | | |
|---|---|---|---|---|---|---|
| | Cars | Trucks | Total | Cars | Trucks | Total |
| West Germany | 2 807 939 | 160 754 | 2 968 693 | 2 829 348 | 143 340 | 2 972 778 |
| France | 2 217 149 | 429 477 | 2 646 626 | 1 911 521 | 390 573 | 2 302 094 |
| United Kingdom | 2 215 574 | 356 783 | 2 572 357 | 1 882 474 | 291 210 | 2 173 684 |
| Italy | 2 184 327 | 144 161 | 2 328 488 | 1 825 383 | 105 391 | 1 930 774 |
| Spain | 877 041 | 191 092 | 1 068 133 | 649 361 | 147 804 | 797 165 |
| Netherlands | 482 617 | 60 230 | 542 847 | 560 512 | 80 166 | 640 678 |
| Belgium | 427 172 | 41 932 | 469 104 | 395 039 | 36 420 | 431 459 |
| Portugal | 206 339 | 62 407 | 268 746 | 75 983 | 21 322 | 97 305 |
| Denmark | 88 603 | 22 766 | 111 369 | 169 386 | 44 740 | 214 126 |
| Ireland | 60 788 | 15 125 | 75 913 | 57 781 | 15 000 | 72 781 |
| Greece | 57 666 | 19 667 | 78 330 | 51 381 | 16 283 | 67 664 |
| Luxembourg | 30 722 | 5 179 | 35 901 | 30 174 | 4 236 | 34 410 |
| **Total EC** | **11 655 937** | **1 509 573** | **13 165 510** | **10 438 343** | **1 296 485** | **11 734 828** |

Source: *Ward's Automotive Yearbook.*

## TABLE A.4

### EC Motor Vehicle Production by Country, 1987-88

| | 1988 | | | 1987 | | |
|---|---|---|---|---|---|---|
| | Cars | Trucks | Total | Cars | Trucks | Total |
| West Germany | 4 346 283 | 279 031 | 4 625 314 | 4 373 629 | 260 444 | 4 634 073 |
| France | 3 223 987 | 474 478 | 3 698 465 | 3 051 830 | 441 380 | 3 634 073 |
| Italy | 1 884 313 | 226 706 | 2 111 019 | 1 701 267 | 199 312 | 1 900 579 |
| Great Britain | 1 226 835 | 318 013 | 1 544 848 | 1 142 985 | 246 762 | 1 389 712 |
| Spain | 1 497 967 | 362 683 | 1 860 650 | 1 402 574 | 301 899 | 1 704 473 |
| Belgium | 1 139 744 | 90 474 | 1 230 218 | 1 123 409 | 72 765 | 1 196 174 |
| Netherlands | 105 000 | 17 000 | 122 000 | 110 000 | 15 000 | 125 000 |
| Portugal | 70 000 | 20 000 | 90 000 | 73 270 | 21 500 | 94 770 |
| **Total** | **13 494 129** | **1 788 385** | **15 282 814** | **12 978 964** | **1 559 027** | **14 537 991** |

Source: *Ward's Automotive Yearbook.*

## TABLE A.5

### Component Markets in Europe — 1985 Summary (in billions of C$)

| Country | Total | Local | Exports | Imports |
|---|---|---|---|---|
| Germany | 26.1 | 25.1 | 3.0 | 2.1 |
| France | 13.2 | 11.0 | 3.6 | 1.3 |
| U.K. | 6.2 | 6.0 | 1.6 | 1.3 |
| Italy | 5.0 | 4.8 | 0.8 | 0.5 |
| Bel/Lux | 3.2 | 6.9 | 0.5 | 4.2 |
| Spain | 3.4 | 4.1 | 0.7 | 1.3 |
| Netherlands | 0.7 | 0.8 | 0.3 | 0.4 |
| Denmark | - | - | - | - |
| Ireland | - | - | - | - |
| Greece | - | - | - | - |
| Portugal | - | - | - | - |
| **Total** | **57.8** | **58.6** | **10.5** | **11.2** |

Source: European Commission.

**Table A.6**

**Leading European Automotive Parts Suppliers**

| Company | Nationality (Ownership) | Sales in C$ millions (Original equipment and aftermarket) | | |
|---|---|---|---|---|
| | | 1986 | 1987 | 1988 |
| Bosch | West Germany | 7 770 | 8 750 | 9 000 |
| Valéo | France | 2 370 | 2 370 | 3 180 |
| Magneti Marelli | Italy | 660 | 2 340 | 2 910 |
| Lucas | U.K. | 2 420 | 2 260 | 2 380 |
| ZF | West Germany | 1 890 | 2 240 | 2 650 |
| GKN | U.K. | 1 790 | 1 870 | 2 380 |
| SKF | Sweden | | 2 260 | 2 380 |
| T&N | U.K. | 530 | 1 460 | 1 720 |
| TRW | U.S. | 1 350 | 1 380 | 1 460 |
| ITT-Teves | U.S. | 1 320 | 1 320 | 1 360 |
| BTR | U.K. | 1 120 | 1 190 | 1 320 |
| VDO | West Germany | 930 | 1 050 | 1 060 |
| Bendix | U.S. | 930 | 890 | 990 |
| Epeda/B.Faure | France | 420 | 750 | 970 |
| BBA | U.K. | | 790 | 930 |
| Mahle | West Germany | | 890 | 900 |
| ECIA | France | 480 | 560 | 790 |
| Fichtel & Sachs | West Germany | 670 | 690 | 700 |
| Eaton | U.S. | 620 | 660 | 660 |
| Reinshagen | U.S. | | | 660 |
| Kolbenschmidt | West Germany | 500 | 500 | 600 |
| Dana | U.S. | 500 | 480 | 480 |
| TI | U.K. | | 460 | 480 |
| Gilardini | Italy | 320 | 440 | 450 |
| Sommer Allibest | France | 330 | 340 | 370 |
| **Total** | | | | **40 860** |

Source: Richard Lamming, *The Causes and Effects of Structural Change in the European Automotive Components Industry*, 1989, p. 16.

Table A.7

**Worldwide Sales of European, U.S. and Japanese Automotive Parts Suppliers, 1988 (in billions of C$)**

| Company | Automotive | Corporate |
|---|---|---|
| **European** | | |
| Bosch | 9.0 | 15.5 |
| Valéo | 3.2 | 3.2 |
| M. Marelli | 2.9 | 2.9 |
| ZF | 2.7 | 3.2 |
| Lucas | 2.4 | 4.0 |
| GKN | 2.4 | 4.6 |
| **U.S.** | | |
| Allied Signal | 4.6 | 13.8 |
| TRW | 3.2 | 8.1 |
| UTC | 2.9 | 20.6 |
| ITT | 2.8 | 22.1 |
| Rockwell | 2.5 | 13.8 |
| 3M | 2.2 | 12.6 |
| **Japanese** | | |
| Nippondenso | 9.5 | 9.7 |
| Aisin Seiki | 4.5 | 4.8 |
| Sumitomo Electric | 4.1 | 5.2 |
| Mitsubishi Electric | 4.1 | 21.7 |
| Hitachi | 3.0 | 29.2 |
| Yazaki | 2.4 | 2.8 |

Source: Lamming, op cit., p. 17.

**APPENDIX B: CHARTS (Source: Informetrica and Statistics Canada)**

**FIGURE 1**

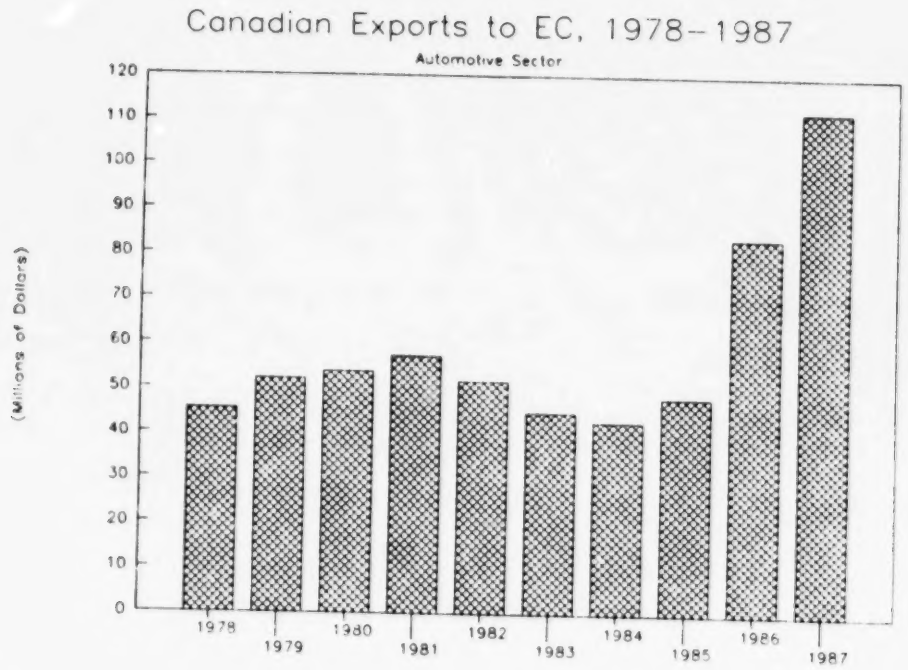



**FIGURE 2**

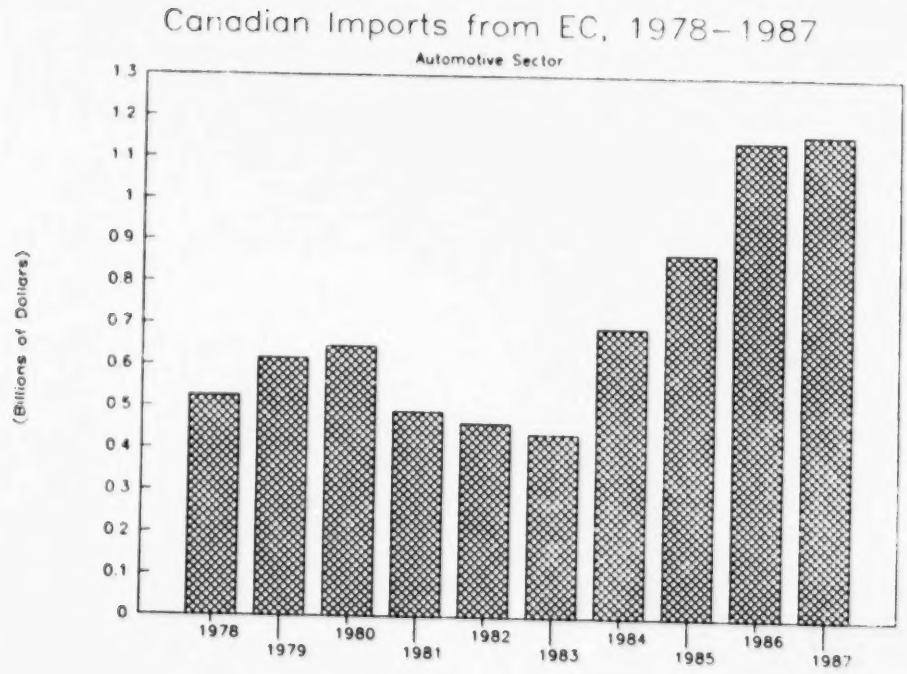


**FIGURE 3**

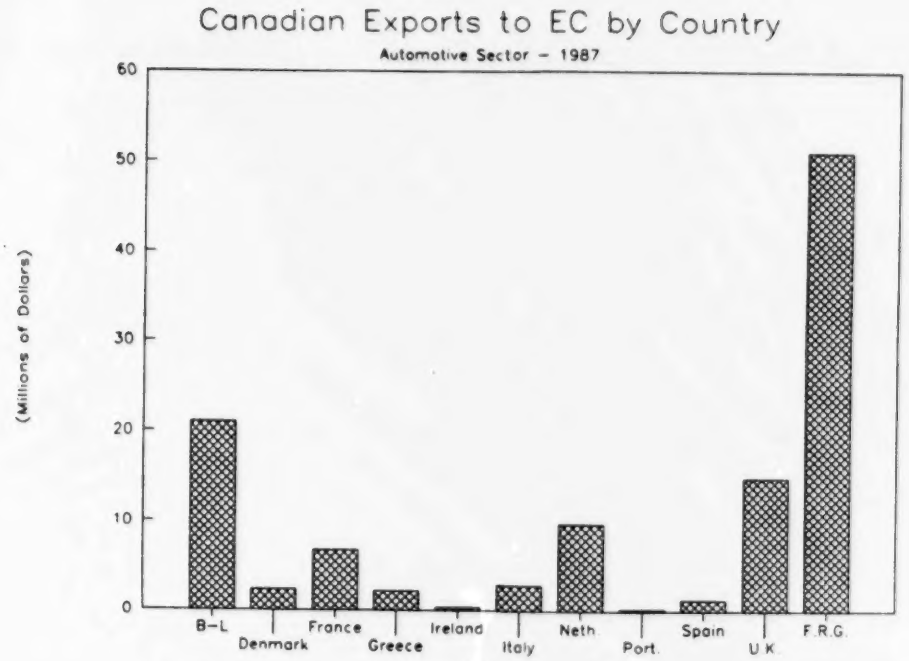
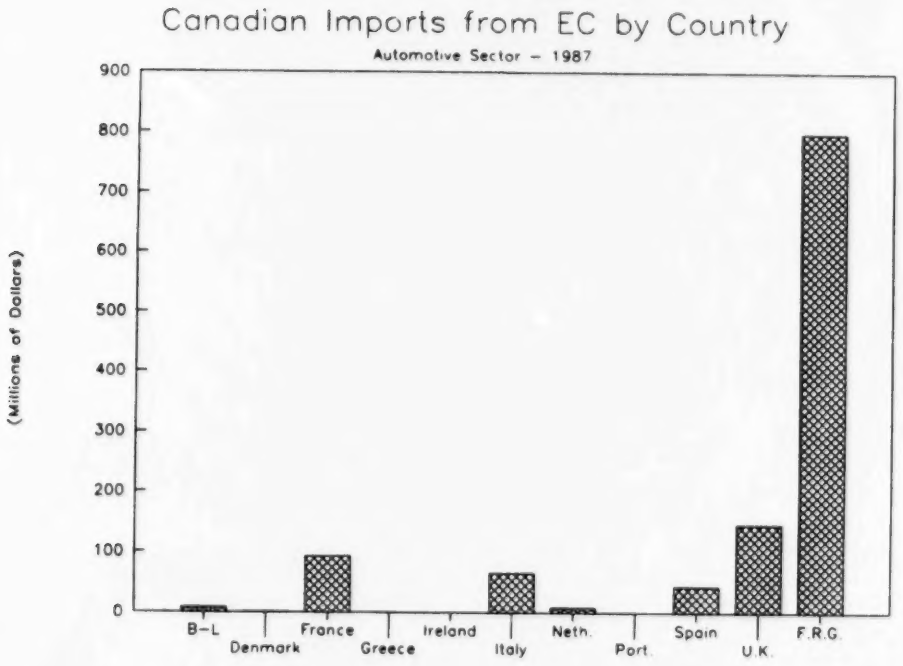



**FIGURE 4**



## BIBLIOGRAPHY


1. *Automotive Sector Industry Profile*, Industry, Science and Technology Canada, Ottawa, 1988.

2. Christian Egenhofer, Centre for European Policy Studies; *The EC Car Industry at the Crossroads*, Brussels, 1989.

3. Deloitte Haskins & Sells; Europe 1992 Database, *Motor Vehicles in the EC*, Brussels, December 1989.

4. European Commission; *Panorama of EC Industry 1989*, Brussels, 1988.

5. JAMA Forum; *Europe and Japan, the Challenges of 1992*, September 1989.

6. Lamming, Richard; *The International Automotive Components Industry: The Next Best Practice for Suppliers*, IMVP International Policy Forum, May 1989.

7. Ludvigsen Associates Ltd.; *The EC92 Automobile Sector*, European Commission, Brussels, 1988.